

Amendment to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A compound, having the structure



wherein D_1 and D_2 , independently, are selected from the group consisting of NH and NH_2 ,

wherein N represents any isotope of nitrogen,

wherein H represents any isotope of hydrogen;

" \sim ", independently, is selected from the group consisting of a single bond and a double bond;

B represents, independently, any isotope of boron;

A_1 and A_5 are, independently, selected from a group consisting of a C , a CX moiety and an N ,

wherein C represents any isotope of carbon,

wherein X represents any atom that forms a single bond with C ;

each A_2 , A_3 , A_4 , A_6 , A_7 , and A_8 are, independently, selected from a group consisting of a CX moiety, a CXZ moiety, a CZ moiety, an NX moiety, and an O ,

wherein X and Z , are, independently, selected from the groups consisting of any atom that forms a single bond and any atom that forms a double bond with C or N and wherein O represents any isotope of oxygen;

wherein each Y_1 , Y_2 , Y_3 , and Y_4 are, independently, selected from the group consisting of hydroxyl moiety and any reactive moiety that converts to a hydroxyl group moiety under

physiologic conditions; and

L represents a linker moiety

[(i) having a molecular weight ranging between about 100 daltons and about 2000 daltons,

(ii) having a span ranging from about 20 Å to about 300 Å, and

(iii)] containing a chain of atoms selected from the group consisting of a combination of C, O, N, S, and P atoms, connected by single bonds or by double bonds in a manner that does not violate the laws of chemistry and wherein S represents any isotope of sulfur and P represents any isotope of phosphorous,

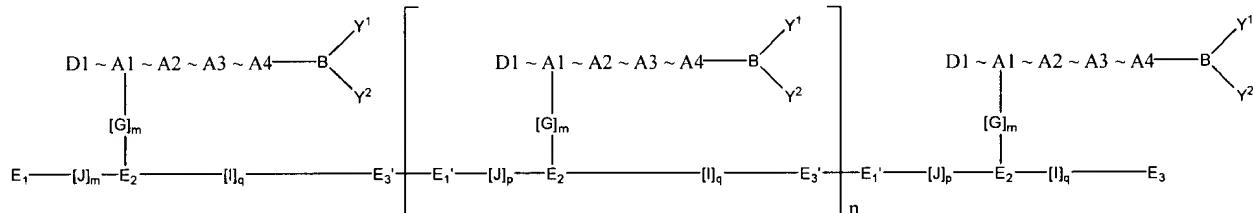
wherein L has a molecular weight ranging between 100 daltons and 2000 daltons,

or

L has a span ranging from 20 Å to 300 Å.

Claims 2.-72. (Canceled)

73. (Currently amended) A compound, having the structure



wherein D is, independently, selected from the group consisting of NH and NH₂,

wherein N represents any isotope of nitrogen,

wherein H represents any isotope of hydrogen;

“~”, independently, is selected from the group consisting of a single bond and a double bond;

B represents, independently, any isotope of boron;

A1 is, independently, selected from the group consisting of a C, a CX moiety, and an N,

wherein C represents any isotope of carbon,

wherein X represents any atom that forms a single bond with C;

each A2, A3, and A4 are, independently, selected from the group consisting of a CX

moiety, a CXZ moiety, a CZ moiety, an NX moiety, and an O,

wherein X and Z, independently, are selected from the group consisting of any atom that forms a single bond and any atom that forms a double bond with C or N and wherein O represents any isotope of oxygen;

wherein Y1 and Y2 are, independently, selected from the group consisting of a hydroxyl moiety and any reactive moiety that converts to a hydroxyl group moiety under physiological conditions;

n represents an integer between [1] 0 and [200] 199, inclusive;

wherein E1 and E3 are independently selected from the group consisting of a carboxylate, amino, imidazole, sulfhydryl, aldehyde, ester, amide, acid chloride, carbonate, and carbamate group such that the E1 and E3 react and form an —E1'—E3'— adduct with a covalent bond between E1' and E3';

wherein [J]_p, E2, [I]_q, and [G]_m together comprise a linker moiety, and wherein [G]_m, [J]_p, and [I]_q represent, independently, a linker group [(i) having a molecular weight ranging between about 100 daltons and about 2000 daltons, (ii) having a span ranging from about 20 Å to about 300 Å, and (iii)] containing a chain of atoms selected from the group consisting of a combination of C, O, N, S, and P atoms, connected by single bonds, double bonds, or triple bonds in a manner that does not violate the laws of chemistry and wherein S represents any isotope of sulfur and P represents any isotope of phosphorus; and wherein m, p, and q represent, independently, an integer from 1 to 50, inclusive; and wherein the linker group has a molecular weight ranging 100 daltons and 2000 daltons or has a span ranging from 20 Å to 300 Å;

E2 is selected from the group consisting of CX, CH, N, PYZ, PU, and B such that E2 [is capable of forming] forms a covalent bond with [J]_p, [G]_m, and [I]_q and

wherein C is any isotope of carbon;

X is, independently, selected from the group consisting of any atom that forms a single bond with carbon;

Y is, independently, selected from the group consisting of any atom that forms a single bond with phosphorous;

Z is, independently, selected from the group consisting of any atom that forms a single bond with phosphorous;

H is any isotope of hydrogen;

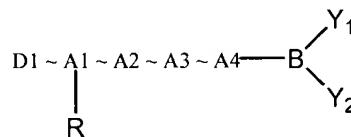
N is any isotope of nitrogen;

P is any isotope of phosphorus;

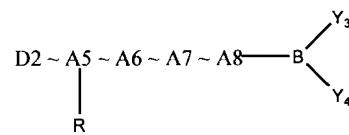
B is an isotope of boron;

U is, independently, selected from the group consisting of any atom that forms a double bond with phosphorous.

74. (New) The compound of claim 1 wherein the following structures



and



represent, independently, a binding moiety, wherein R represents the remainder of the molecule.

75. (New) The compound of claim 74 wherein there are four atoms positioned between the group consisting of D1 and D2 and B of the binding moiety.

76. (New) The compound of claim 74 wherein the binding moiety includes a carbon atom in an L-configuration.

77. (New) The compound of claim 1 wherein Y¹, Y², Y³, and Y⁴ are hydroxyl groups.

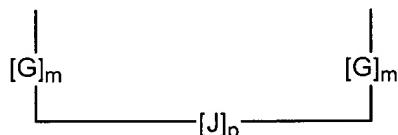
78. (New) The compound of claim 1 wherein the A4 is CXZ, and the A4 bonded to B is in the L-configuration; and wherein A8 is CXZ, and the A8 bonded to B is in the L-configuration.

79. (New) The compound of claim 74 wherein the binding moiety is an L-amino acid derivative, wherein the carboxylic acid group of the L-amino acid has been replaced by a boron-containing group.

80. (New) The compound of claim 74 wherein the binding moiety is selected from the group consisting of L-Lys-L-boroPro, derivatives of L-Lys-L-boroPro, L-Pro-L-boroPro, derivatives of L-Pro-L-boroPro, L-Ala-L-boroPro, derivatives of L-Ala-L-boroPro, L-Val-L-boroPro, and derivatives of L-Val-L-boroPro.

81. (New) The compound of claim 1 wherein the linker molecule contains a functional group selected from the group consisting of a carboxylate group, an amino group, a sulfhydryl group, an imidazole group, an alkene group, an acyl halogen group, and CH_2X , wherein X represents a halogen.

82. (New) The compound of claim 1 wherein the linker molecule is further defined as having the following structure:



wherein $[G]$ is selected from the group consisting of a carbon, nitrogen, oxygen, hydrogen, and a sulfur atom; $[J]$ is selected from the group consisting of a CH_2 molecule, a chain of carbon atoms, a chain of nitrogen atoms, a chain of oxygen atoms, and combinations thereof; and m, p, and q represent an integer from 1 to 50, inclusive.

83. (New) The compound of claim 82 wherein $[G]$ is an R group selected from the group consisting of L-amino acid residues selected from the group consisting of lysine, cysteine, glutamic acid, aspartic acid, histidine, arginine, glutamine, and asparagine and D-amino acid residues selected from the group consisting of lysine, cysteine, glutamic acid, aspartic acid, histidine, arginine, glutamine, and asparagine.

84. (New) The compound of claim 1 wherein the linker molecule is selected from the group consisting of hexanedioic acid (adipic acid), ethylene glycobissuccinate (EGS), 1,4-

diaminobutane, 1,4-dithiobutane, dithiothreitol, lysine, cysteine, glutamic acid, aspartic acid, histidine, arginine, glutamine, and asparagine.

85. (New) The compound of claim 1 wherein the linker molecule contains at least two amino groups when the binding moieties contain glutamic acid residues.

86. (New) The compound of claim 1 wherein the linker molecule contains at least two amino groups when the binding moieties contain aspartic acid residues.

87. (New) The compound of claim 1 wherein the linker molecule contains at least two sulfhydryl groups when the binding moieties contain cysteine residues.

88. (New) The compound of claim 1 wherein the linker molecule span ranges from about 30 Å to about 100 Å.

89. (New) The compound of claim 73,

wherein $[G]_m$ is the side chain of a D- or L-isomer of lysine, cysteine, glutamic acid, aspartic acid, histidine, arginine, glutamine, and asparagine;

E_2 is a D- or L-isomer of lysine, cysteine, glutamic acid, aspartic acid, histidine, arginine, glutamine, and asparagine; and

E_1 and E_3 are selected from the group consisting of an amino moiety and a carboxylic acid moiety.

90. (New) The compound of claim 73,

wherein $[G]_m$ is the side chain of a D- or L-isomer of lysine, cysteine, glutamic acid, aspartic acid, histidine, arginine, glutamine, and asparagine;

E_2 is selected from the group consisting of 2-carboxybutyl, 2-carboxypropyl, 2-aminobutyl, 2-aminopropyl, and a hydrocarbon chain with an amino or carboxy side chain;

$[J]_p$ and $[I]_p$ represent, independently, hydrocarbon chains; and

E_1 and E_3 are selected from the group consisting of an amino moiety and a carboxylic acid moiety.

91. (New) The compound of claim 73 wherein Y^1 and Y^2 are hydroxyl groups.

92. (New) The compound of claim 73 wherein the A_4 is CXZ , and the A_4 bonded to B is in the L-configuration.